FLIR SYSTEMS
THE GLOBAL LEADER IN INFRARED CAMERAS

BEYOND COMPARE

ThermaCAM™ T-Series / B-Series
Probably the smartest infrared camera on earth

Change the way you see the world around you

![FLIR Systems logo]

THE GLOBAL LEADER IN INFRARED CAMERAS

We shape the future of infrared technology, every day

Capturing infrared images with FLIR Systems cameras

Infrared is everywhere: heat radiation is emitted by every object above a temperature of zero Kelvin or -273°C. You just need an infrared camera to capture this radiation and to make it visible. One that is able to make clear thermal images, to measure minimal temperature differences instantly and to convert these thermal images into a standard electronic format ready for further processing.

FLIR Systems thermal cameras keep plants running, buildings safe and assets protected. FLIR Systems is the pioneer in infrared. Today, it is the global leader in infrared cameras that are in use worldwide for a growing number of applications.

Engineering power, passion for technology

FLIR Systems has developed infrared cameras for commercial use for over 50 years.
Its camera systems and software solutions are planned, developed and manufactured at plants in Stockholm, Sweden and Boston and Santa Barbara, USA.
Our engineers master all the disciplines needed to make the best cameras in the world: from detector development, to the camera's optics, radiometrics, hardware and software.

A perfect combination resulting in a camera offering the best of both worlds: ease of use and powerful self explaining analysis software. But, to get the best performance out of a brilliant tool you need training.
We therefore also offer full customer support with a responsive and localized service structure and with the best infrared training programs available on the market.
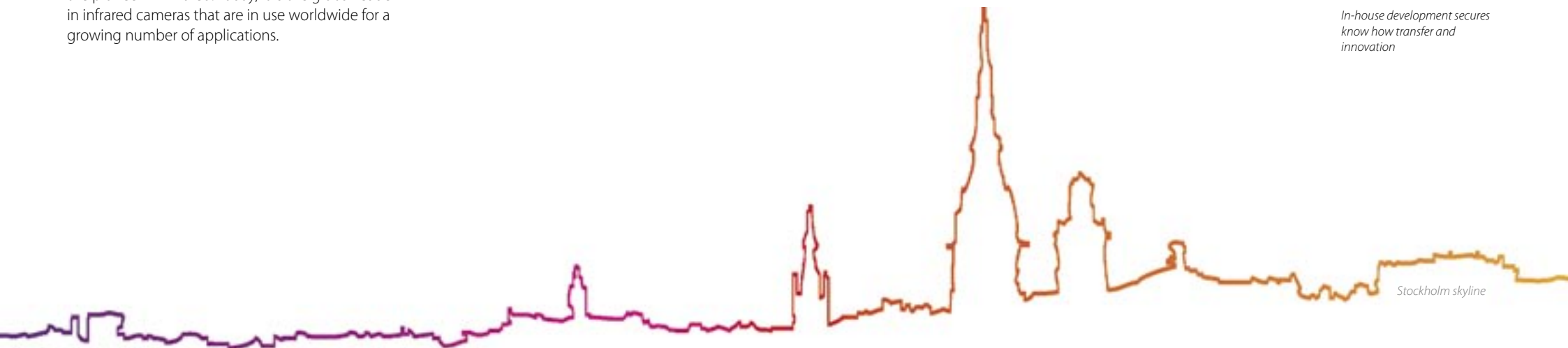
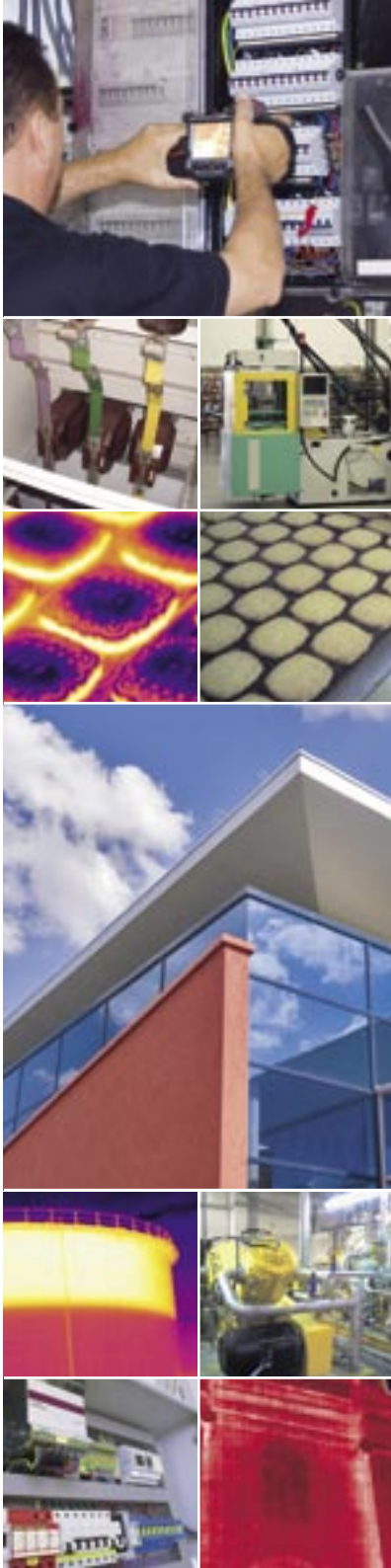*Industrial robot used for assembling and calibration of cameras*

Infrared camera lenses made from germanium at FLIR Systems plant

In-house development secures know how transfer and innovation

Stockholm skyline

Visualize the smallest temperature differences,
solve the problem

"As long as the simple truth prevails that something goes hot before it breaks down, applications for infrared cameras will be endless."

Markets are ruled by speed-to-market, zero-error tolerance and, last-but-not-least, by the need for sustainable, energy and money saving solutions.

Customers are demanding: suppliers are required to provide faultless goods. Engineers ask for seamless operation and maintenance. Customers need a stable product quality. And controllers want cost-effectiveness from product development to production and from quality control to maintenance.
Infrared cameras are used to inspect vital assets, trace anomalies which are invisible to the naked eye and give a clear visual and infrared picture of the situation.

"Applied on a regular basis, thermal imaging improves product output quality and avoids cost-intensive and energy-consuming failures of equipment and systems."

Making better buildings

The building sector is facing a growing set of regulations and ever-shorter time frames to get the job done. Operation expenses in general and heating, ventilation, air conditioning costs are on the rise. Legislation pushes the implementation of energy-saving construction technology, materials and appliances for both commercial and residential buildings to new heights. Buildings and installations are an asset. Costs are rising, but so does the value if it is properly preserved or improved.
Using an infrared camera for building applications before every evaluation, transaction, or major HVAC (Heating Ventilation Air Conditioning) repair maximizes the value and minimizes the costs.

"FLIR Systems caters to these needs by developing infrared camera systems, software and support tailored to every market and application."

Industrial

Building &
Construction

Truly beyond compare

The new T and B camera from FLIR Systems are proof of our determination to produce and market new world class infrared cameras which are user friendly, compact, lightweight, easy-to-use and with a comprehensive software support.

FLIR Systems now has developed a new generation of portable infrared cameras. The T and B-Series cameras show FLIR Systems' determination to take infrared camera ergonomics, weight and ease-of-use to a new level.

We responded to the application-driven markets and simultaneously introduced an infrared camera for industrial environments and one for building applications. A camera that offers outstanding communication with the software and the world around it. Probably the smartest camera in the world.

Powerfull on the inside,
stylish on the outside

Usability is key.
FLIR Systems engineers have translated user feedback with regards to comfort and image resolution into a series of comprehensive and innovative features:

• Outstanding ease-of-use

• Small and light weight

• Touch screen and sketching annotation feature

• Excellent infrared image quality

• Integrated digital camera

• Tiltable lens unit

• Infrared and visual image fusion function (Thermal Fusion)

ThermaCAM™ T-Series / B-Series

Applications

World-class technology

Industrial applications

The new ThermaCam T-Series is the ideal tool to spot problems in plants, factories or in any other situation.

Its features are application-driven and cover all needs as required by product development, production quality assurance, inspectors of electrical installations, maintenance and repair personnel, just to name some of the major fields of application.

Zoom and pan on the screen, multiple measurement spots, isotherms, temperature difference calculations, text and voice annotations, and also small sketching on the touch screen using the stylus will make your job a lot easier. The new Thermal Fusion function merges visual and infrared images – while retaining all relevant temperature data.

- Supervise the production process and detect hidden faults
- Detect and measure heat development in electrical and mechanical devices
- Raise production output

- See blocked pipework and insulation defects
- Optimize product development
- Secure product quality
- Enhance work safety

Overheated electrical fuse

ThermaCAM™ T-Series

Building & Construction

The ThermaCAM B-Series clearly documents damage, repairs, restoration, insulation or HVAC (Heating Ventilation Air Conditioning) works. The camera shows customers the exact problem and eventually confirms that it has been repaired correctly. Moreover, it expands the range of services offered by building sector specialists, allowing them to serve their customer groups better.

The B-version comes with adapted temperature measurement range, insulation and humidity alarms (including dew point alarm) which display and measure critical areas and eliminate costly inspection techniques that require labour, time and destructive probing.

- Locate air leakages in the building
- Find insulation defects
- Check repair quality
- Find moisture sources and structural problems quickly

- Locate heating & cooling losses with pinpoint accuracy
- Preventive check before restoration
- Locate encased structures

Inspection of a cooling ceiling

ThermaCAM™ B-Series

Design

ThermaCAM™ T-Series / B-Series
The best of both worlds

With the introduction of the ThermaCAM™ T-Series and B-Series we are once again revolutionizing the world of Infrared with a combination of superior functionality and outstanding usability.

For FLIR Systems engineers, the real challenge has been to merge superior imaging, measurement and data management performance with an outstanding ease of use. The development team is proud to present a lightweight, versatile, easy-to-use and comfortable instrument with some first-time-ever features and benefits. A new infrared camera offering outstanding communication with the software and the world around it.

User comfort is significantly enhanced by the tiltability of the lens unit. This feature offers users exceptional fine-tuning possibilities to bring the camera into the most suitable position at any place and from any perspective in order to achieve the desired result.

Tiltable lens unit

Multifunctional LCD touch screen allows sketching and marking directly on the screen

Multifunctional LCD touch screen allows quick and easy camera software menu handling.
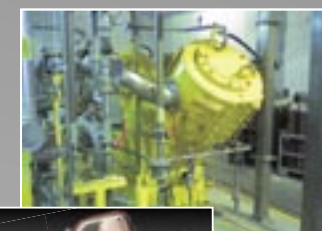
High quality visual images

8

Application-driven functions

As a complete camera system, the T and B-Series feature an integrated visual camera. Its infrared image resolution and measurement functions suit the most diverse professional applications. The user interface is innovative and includes voice annotation with use of the standard headset. It is the first infrared camera equipped with a multifunctional LCD touch screen. This allows the user to make text annotations, sketches and marking directly on the screen using the stylus. On top of this the menu handling and software are quick and easy to use.

- Tiltable

- Lightweight

- Compact

An optimum mix of ergonomics, flexibility and features

The ThermaCAM T and B-Series' excellent unsurpassed look-and-feel, combined with a weight of 880 g ensures an outstanding grip and user comfort – with a battery life of more than four hours.

Power / Functionality:

Measurement range
The T-Series measures temperatures from-20°C to +120°C or 0°C to 350°C (optional up to 1,200°C). The B-Series model measures from -20°C to 120°C (optional up to 350°C).

320x240 pixels
The T/B-Series infrared image resolution suits all applications

Visual camera
The integrated 1.3 Mpixel digital camera makes observing and inspecting faster and easier

4 hours battery life
The T/B-Series has an impressive operating time

Interfaces
The T/B-Series is equipped with standard video, USB outputs as well as a SD card

Interchangeable Infrared lens
The T-Series features a standard 25° lens and optional 15° and 45° lenses

FLIR Thermal Fusion
Merges visual and infrared images to offer better analysis.

Design / Ergonomics:

Tiltable lens unit
A 120° tiltability of the lens unit allows use in all situations, anywhere and from any perspective

880 g weight
The T/B-Series camera can boast the best possible functionality-weight ratio available due to the use of advanced materials and components compact

Look-and-feel
The camera comes in a magnesium metal housing, Its exterior parts are made of, or covered with high-value synthetic materials to ensure a better grip and user comfort.

Ease-of-use / Features:

Touch screen
A 3.5" LCD touch screen plus stylus brings interactivity and user comfort to a new level. It allows sketching and graphical marks on the imagery

Text annotations
Make text annotations from pre-defined list or using the touchscreen

Sketch annotations
Add sketch annotations on the touch screen.

Voice annotations
Add voice comments to clarify your findings.

Temperature sound, image alarms
Make surveying easier and faster

Measurement modes
moveable measurement spots, auto hot/cold spot indication, isotherms, ΔT calculation

Automatic focus, zoom
Allows to adjust, measure and capture easily and quickly.

Ergonomic design

Easy-to-use controls

SD card secures easy data storage and transfer.

Ergonomically placed buttons allow easy handling and operation.

Rechargeable battery for more than 4 hours of operation.

Flashlight

Visual camera

Stylus

mini USB

Headset

Video

USB

Joystick control buttons

Tiltable lens unit

Touch screen

Laser pointer

Interchangable infrared lens

dedicated control buttons

What is FLIR Thermal Fusion?

VISUAL   THERMAL FUSION   IR
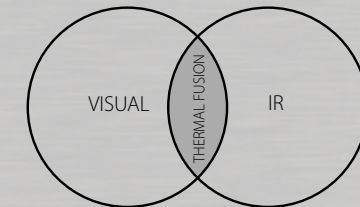
Easy focus on fault detection by use of color differences
FLIR Thermal Fusion merges visual and infrared images. This function allows a gradual and seamless transition from thermal into visual and vice versa inside one image. All measurement functions remain active in both view modes. The Thermal Fusion function is also available for sequenced image material.
Thermal Fusion is a major asset for product development and inspections of many objects that require a detailed and focused follow-up and imaging of temperature developments. Thermal Fusion is a available on the T and B-Series camera and in the ThermaCAM Reporter™ software.

Visual image

Thermal Fusion image

Infrared image

The easiest way to share your images

Take infrared images, store them and review, analyze, present and distribute them afterwards. With the self explanatory software packages developed and provided by FLIR Systems it is done almost automatically.

The QuickReport reporting software suite is a user-friendly tool to create inspection reports. It is included into the T and B-Series package.

ThermaCAM™ Reporter™
The wizard does it for you

The ThermaCAM Reporter software is a professional reporting suite that allows the thermographer to concentrate on reviewing the images and making recommendations. The software includes functions such as image processing, automatic report generation, calculation of expected thermal performance (Trending) and Thermal Fusion. It uses standard word processing and image formats.
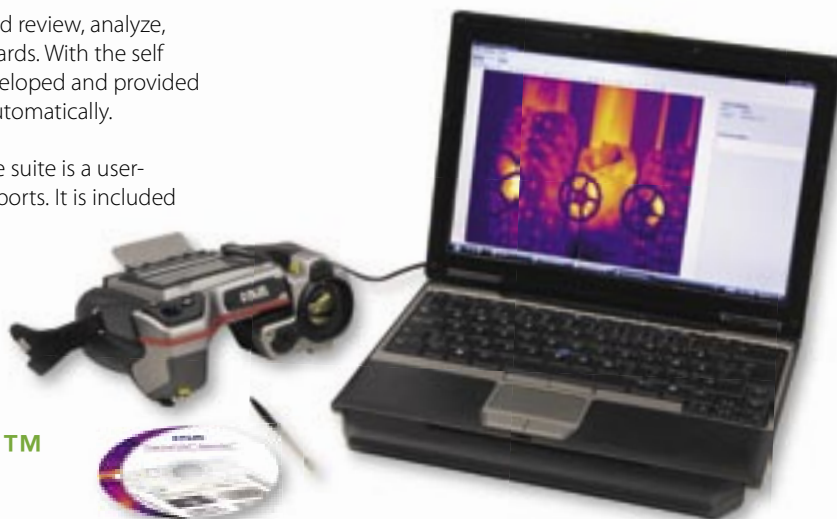
- Wizard-based user interface
- Secures excellent communication between camera and software
- Excellent search functionality
- Allows live report creation by drag & drop and other modes
- Post processing of fully radiometric imagery
- Supports temperature alarms (threshold, humidity (incl. dew point alarm), insulation alarms)
- Supports sketch function
- Supports Trending function
- Supports Thermal Fusion with improved image quality

A complete package

The ThermaCAM T-Series and B-Series come with a functional product box that allows the camera to be charged while being in the case. Moreover, the camera is placed in the box in such a way, that the user can work with the screen and link it with a computer without having to take it out.

The package includes:

- Cabling
- Battery charger
- LCD screen sun shield
- QuickReport™ software
- User manual
- Headset
  (T400 / B400)

Training
understanding the laws of infrared

FLIR Systems closely cooperates with the Infrared Training Centre, an independent, ISO certified, worldwide training facility. The ITC offers IR training, certifications accepted by many standardization organizations, as well as specialized instruction in building diagnostics and other application areas.

Service and warranty:
taking care of the customer

Without proper maintenance, an infrared camera can yield false readings. And failing to discover a potential problem or getting a false temperature measurement can compromise worker safety and compromise the camera operator's reputation on the job.

Local ISO 9001:2000 certified FLIR Systems service centres provide inspection, calibration and repair to all FLIR brand infrared cameras.

Accessories

The ThermaCAM™ T-Series camera offers a complete set of useful accessories to enhance your imaging and measurements applications. From a comprehensive range of lenses to multiple charger systems.

Car charger

30 mm / 15° lens

10 mm / 45° lens   Extra Battery   Battery charger   Pouch

T400   T360

T400   T360

Imaging Performance	T400	T360
Thermal:		
Field of view	25° x 18.75°	25° x 18.75°
Spatial resolution (IFOV)	1.36 mrad	1.36 mrad
Thermal sensitivity (at 30 °C)	70 mK	70 mK
Image frequency	9 or 30 Hz	9 or 30 Hz
Min focus distance	0.4 m	0.4 m
Digital zoom	8 x	2 x
Pan	✓	✓
Focusing	Manual / autofocus	Manual / autofocus
Visual:		
Built-in digital camera 1.3 Mpixel with lamp	✓	✓

Detector		
Focal Plane array (FPA), uncooled microbolometer, spectral range, 7.5 to 13 µm	320 x 240 pixels	320 x 240 pixels

Image presentation		
Built-in 3,5" high resolution touch screen LCD	✓	✓

Measurement		
Temperature range	-20 °C to +120 °C 0 °C to +350 °C (optional up to +1200 °C)	-20 °C to +120 °C 0 °C to +350 °C (optional up to +1200 °C)
Accuracy (of reading)	± 2 °C or ± 2%	± 2 °C or ± 2%

Features		
Spotmeter	multiple	multiple
Box area, Max/Min/Average value	multiple	multiple
Box area, Max and min temp.position marker	✓	✓
Measure hot cold temp. (color alarm incl above/below)	✓	✓
Measure hot cold temp. - interval	✓	✓
Difference temperature function	✓	•
Reference temperature	✓	•
Measure value alarms	multiple	•
Radiometric file format	✓	✓
Thermal Fusion	✓	✓
IR/visual image markers	multiple	•
Voice comments	✓	•
Text comments from file	✓	✓
Text comments from touch screen keyboard	✓	✓
Sketch	✓	•
Color palettes	BW, BW inv, Iron, Rain,RainHC, bluered	BW, BW inv, Iron, Rain

Laser Pointer		
Laser activated by dedicated button	✓	✓

Image storage		
Removable SD-card	✓	✓

Interfaces	T400	T360
USB, file transfer to/from PC	✓	✓
Audio headset connection	✓	✓
Standard video output: CVBS (ITU-R-BT.470 PAL/SMPTE 170M NTSC)	✓	✓
Power input	✓	✓

Lenses for IR camera		
Normal lens	25°	25°
Added optics, tele lens, wide angle lens	15° , 45°	15° , 45°

Power system		
Rechargeable Lithium-Ion battery	✓	✓
Operating time, continuous operation	4 h	4 h
Power management, automatic shut down and sleep mode	✓	✓
AC adapter, 90-260 VAC input. 12 V output to camera	✓	✓
2 bay charging system, 10-16 V input.	✓	✓

Environmental specifications		
Operating temperature range	-15 °C to +50 °C	-15 °C to +50 °C
Storage temperature range	-40 °C to +70 °C	-40 °C to +70 °C
Humidity, operating and storage, non-condensing	IEC 68-2-30/24 h 95% relative humidity +25°C to +40°C	IEC 68-2-30/24 h 95% relative humidity +25°C to +40°C
Encapsulation, camera housing and lens	IP 54 (IEC 60529)	IP 54 (IEC 60529)
Encapsulation, Transport case	IP 65 (IEC 60529)	IP 65 (IEC 60529)
Bump	25 g (IEC 60068-2-29)	25 g (IEC 60068-2-29)
Vibration	2 g (IEC 60068-2-6)	2 g (IEC 60068-2-6)
EMC, emission	EN 61000-6-3:2001 (Emission) FCC 47 CFR Part 15 Class B (Emission)	EN 61000-6-3:2001 (Emission) FCC 47 CFR Part 15 Class B (Emission)
EMC, immunity	EN 61000-6-2:2001 (Immunity)	EN 61000-6-2:2001 (Immunity)

Physical characteristics		
Weight	880 g	880 g
Size, L x W x H	106 x 201 x 125 mm	106 x 201 x 125 mm
Tripod Mounting	1/4" - 20	1/4" - 20

Software		
ThermaCAM QuickReport	✓	✓
ThermaCAM Reporter 8	optional	optional
ThermaCAM Reporter 8 Professional	optional	optional

Languages (manuals and software)		
	Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Swedish, Traditional Chinese, Turkish	

Included in the ThermaCAM™ T400 & T360		
	Carrying case, Lens cap, Battery (1), Charger, Power supply, Power cord, Manual, Headset (only T400), Video cable, USB cable, sun shield, Pen, SD Card	

B400 B360

Imaging Performance

	B400	B360
Thermal:		
Field of view	25° x 18.75°	25° x 18.75°
Spatial resolution (IFOV)	1.36 mrad	1.36 mrad
Thermal sensitivity (at 30 °C)	70 mK	70 mK
Image frequency	9 or 30 Hz	9 or 30 Hz
Min focus distance	0.4 m	0.4 m
Electronic zoom	8 x	2 x
Pan	✓	✓
Focusing	Manual / autofocus	Manual / autofocus
Visual:		
Built-in digital video 1.3 Mpixel with lamp	✓	✓

Detector

	B400	B360
Focal Plane array (FPA), uncooled microbolometer, spectral range, 7.5 to 13 µm	320 x 240 pixels	320 x 240 pixels

Image presentation

	B400	B360
Built-in 3,5" high resolution touch screen LCD	✓	✓

Measurement

	B400	B360
Temperature range	-20 °C to +120 °C (optional up to +350 °C)	-20 °C to +120 °C (optional up to +350 °C)
Accuracy (of reading)	± 2 °C or ± 2%	± 2 °C or ± 2%

Features

	B400	B360
Spotmeter	multiple	multiple
Box area, Max/Min/Average value	multiple	multiple
Box area, Max and min temp.position marker	✓	✓
Measure hot cold temp. (color alarm incl above/below)	✓	1
Measure hot cold temp. - interval	✓	✓
Difference temperature function	✓	•
Reference temperature	✓	•
Measure value alarms	multiple	•
Humidity alarms (incl dew point)	✓	✓
Insulation alarm	✓	✓
Radiometric file format	✓	✓
Thermal Fusion	✓	✓
IR/visual image markers	multiple	•
Voice comments	✓	•
Text comments from file	✓	✓
Text comments from touch screen keyboard	✓	✓
Sketch		•
Color palettes	BW, BW inv, Iron, Rain,RainHC, bluered	BW, BW inv, Iron, Rain

Laser Pointer

	B400	B360
Laser activated by dedicated button	✓	✓

Image storage

	B400	B360
Removable SD-card	✓	✓

Interfaces

	B400	B360
USB, file transfer to/from PC	✓	✓
Audio headset connection	✓	✓
Standard video output: CVBS (ITU-R-BT.470 PAL/SMPTE 170M NTSC)	✓	✓
Power input	✓	✓

Lenses for IR camera

	B400	B360
Normal lens	25°	25°
Added optics, tele lens, wide angle lens	15° , 45°	15° , 45°

Power system

	B400	B360
Rechargeable Lithium-Ion battery	✓	✓
Operating time, continuous operation	4 h	4 h
Power management, automatic shut down and sleep mode	✓	✓
AC adapter, 90-260 VAC input. 12 V output to camera	✓	✓
2 bay charging system, 10-16 V input.	✓	✓

Environmental specifications

	B400	B360
Operating temperature range	-15 °C to +50 °C	-15 °C to +50 °C
Storage temperature range	-40 °C to +70 °C	-40 °C to +70 °C
Humidity, operating and storage, non-condensing	IEC 68-2-30/24 h 95% relative humidity +25°C to +40°C	IEC 68-2-30/24 h 95% relative humidity +25°C to +40°C
Encapsulation, camera housing and lens	IP 54 (IEC 60529)	IP 54 (IEC 60529)
Encapsulation, Transport case	IP 65 (IEC 60529)	IP 65 (IEC 60529)
Bump	25 g (IEC 60068-2-29)	25 g (IEC 60068-2-29)
Vibration	2 g (IEC 60068-2-6)	2 g (IEC 60068-2-6)
EMC, emission	EN 61000-6-3:2001 (Emission) FCC 47 CFR Part 15 Class B (Emission)	EN 61000-6-3:2001 (Emission) FCC 47 CFR Part 15 Class B (Emission)
EMC, immunity	EN 61000-6-2:2001 (Immunity)	EN 61000-6-2:2001 (Immunity)

Physical characteristics

	B400	B360
Weight	880 g	880 g
Size, L x W x H	106 x 201 x 125 mm	106 x 201 x 125 mm
Tripod Mounting	1/4" - 20	1/4" - 20

Software

	B400	B360
ThermaCAM QuickReport	✓	✓
ThermaCAM Reporter 8	optional	optional
ThermaCAM Reporter 8 Professional	optional	optional

Languages (manuals and software)

Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Swedish, Traditional Chinese, Turkish

Included in the ThermaCAM™ B400 & B360

Carrying case, Lens cap, Battery (1), Charger, Power supply, Power cord, Manual, Headset (only B400), Video cable, USB cable, sun shield, Pen, SD Card